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# NOTEWORTHY COLLECTIONS

## California

*Parnassia cirrata* Piper (SAXIFRAGACEAE). Shasta Co., North Fork of Shotgun Creek, approximately 5.9 km west (280°T) of Sims USFS Fire Station and 4.3 km south (185°T) of Grey Rock Lake, in an area of springs and meadow in rocky serpentine soil. Associated species include *Rhododendron occidentale, Darlingtonia californica, Chamaecyparus lawsoniana, Tofieldia glutinosa, Pinus ponderosa, Pinus lambertiana, Lilium pardalinum,* and *Carex gigas.* Chicken Hawk Hill USGS 7.5′ quad, T37N R05W, NE¼ SW¼ Sec 10, UTM 10 547986E 4547788N, elevation 1412 m, 11 Sep 2003, *M.J.Lenz* (JEPS, CHSC)

*Previous knowledge.* Although the original description of *P. cirrata* (Piper 1899, Erythea 7(1):128) and early California floras (Jepson 1925, A manual of the flowering plants of California, University of California Press, Berkeley, CA; Munz 1959, A California flora, University of California Press. Berkeley, CA) note it as occurring in the Sacramento River drainage, more recent literature (Hickman 1993, The Jepson manual: higher plants of California, University of California Press, University of California Press, Berkeley, CA; CNPS 2003, California Native Plant Society, Inventory of rare and endangered plants (online edition, v6-3), Rare Plant Scientific Advisory Committee, California Native Plant Society. Sacramento, CA) only mentions its southern California distribution. Piper's description, based on the type specimen from Mt. San Bernardino (Parish #156, 1879), includes a reference to a co-mounted collection by W.H. Brewer (#1445) from the "upper Sacramento River, growing with Darlingtonia." Jepson mentioned *P. cirrata* as occurring in the "upper Sacramento River," and Munz noted its distribution in the "upper Sacramento V." However, the Jepson Manual (Hickman 1993) mentions it occurring in only the San Gabriel Mountains, San Bernardino Mountains, and Mexico. Likewise, CNPS (2003) mentions it occurring in San Bernardino and Los Angeles counties. Additionally, the California Department of Fish and Game's California Natural Diversity Database contains no records of *P. cirrata* from the northern part of the state.

*Significance.* This collection verifies the occurrence of *P. cirrata* in the Sacramento River canyon, as initially described by Piper over 100 years ago. It also raises questions as to whether the northern populations are significantly disjunct from those in southern California, or if *P. cirrata* has perhaps been overlooked at intervening locations. Subsequent to this collection, review of the *P. fimbriata* collections at CHSC determined that two of those collections had been misidentified and were in fact *P. cirrata* (Lawrence Janeway personal communication). One of those collections is from the Trinity River drainage in Trinity County, and the other is from the Scott River drainage in Siskiyou County.

Thanks go to Roseburg Resources Co. for access to their lands, upon which this species was found and collected, and for financial support for the collections.

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## Colorado

*Eichhornia crassipes* (Mart.) Solms (PONTEDERIACEAE).—Weld Co., Epple Park, 43rd Ave. and 4th Street, [Greeley], 40°25′41″N, 104°45′15″W, 25 Sep 2003, *J. Grasser 373* (GREE); Weld Co., Elk Lake, located on the corner of 35th Ave and [US] Highway 34, Greeley, 40°23′N, 104°44′W, 22 Sep 2002, *R. Wallace 10* (GREE); El Paso Co., Little Turkey Cr. Drainage, in shallow pond growing with *Pistia stratiotes, Potamogeton,* and *Typha,* T16S, R67W, S8, 2380 m, 31 Aug 2000, *T. Kelso & G. Maentz 00-169* (COCO, COLO); Boulder Co., City of Louisville, Coal Creek Golf Course, floating in shallow water in the middle of Coal Creek, north of Dillon Road and about 300 m east of the golf course clubhouse and parking lot, 25 Sep 2001, *W. F. Jennings 1366* (GREE).

*Previous knowledge.* This species is becoming sporadically established in many states east of the Mississippi River and in Ontario, Canada. West of the Mississippi it is known from Texas, Arizona (where it is a noxious weed), California, and possibly Washington (Kartesz and Meacham 1999, Synthesis of the North American flora, Version 1.0 [compact disc], North Carolina Botanical Garden, Chapel Hill, NC).

*Significance.* These are the first collections from Colorado. This species and *Pistia stratiotes* (see next note) are commonly used in tropical fish aquaria and may be entering aquatic habitats from unintentional disposal by dealers or aquarium enthusiasts. The collection by Wallace in Weld County was from an artificial cattail marsh on the edge of a strip mall near a pet store. According to the groundskeeper at the golf course in Boulder County, the plants float down the creek from an unknown source. The two to three dozen plants (some in flower) seen by Jennings are only a fraction of what he had seen earlier. It is uncertain whether the species can survive winters, but since some larger bodies of water (e.g., Pueblo Reservoir) on the plains of Colorado sometimes do not freeze over during the winter, it may persist for more than one year.

*Pistia stratiotes* L. (ARACEAE).—El Paso Co., Little Turkey Cr. Drainage, in shallow pond growing with *Eichhornia, Potamogeton,* and *Typha,* T16S, R67W, S8, 2380 m, 31 Aug 2000, *T. Kelso & G. Maentz 00-170* (COCO, COLO).

*Previous knowledge.* This species, commonly called Water Lettuce, is an escapee in several states (CA, AZ, TX, LA, MS, FL, GA, SC, NC, NY) and is reported to be present from Missouri and Ohio (Kartesz and Meacham 1999, Synthesis of the North American flora, Version 1.0 [compact disc], North Carolina Botanical Garden, Chapel Hill, NC).

*Significance.* First collections in Colorado and the Rocky Mountain region.

*Physaria brassicoides* Rydb. (BRASSICACEAE).—Weld Co., Eagle Rock Sanctuary (now defunct) on Eagle Rock Ranch, T11N, R65W, S8, May 1977–Sep 1978, *W. E. Harmon 8900* (GREE); Eagle Rock Sanctuary, T11N, R 65W, S15, May–Sep 1977–1978, *W. E. Harmon 8911* (GREE).

*Previous knowledge.* According to the PLANTS Database this species occurs in ND, SD, NE, MT, and WY (http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=PHBR5). In Wyoming its closest occurrence is in Laramie county (http://www.esb.utexas.edu/tchumley/wyomap/BRA/phybra.pdf). The USGS-NPS Vegetation Mapping Program also reports *Physaria brassicoides* from the "Siltstone-Clay Butte Sparse Vegetation" community on the Oligocene aged Brule Formation (http://biology.usgs.gov/npsveg/scbl/descript/scb.pdf). An illustration of the species by Debbie McNiel is available from the Montana Natural Heritage Program (http://nhp.nris.state.mt.us/plants/illust/sid1365i.pdf).

*Significance.* First collections in Colorado. This species is the only member of *Physaria* endemic to the Great Plains (The Great Plains Flora Association, 1986). It is not a common plant, and one of us (Jennings) doubts whether more than 50 sites exist throughout its entire range. *Physaria brassicoides* occurs primarily on sparsely vegetated sites that are frequently steep and eroding. The nearest collections are approximately 100 km north at Scotts Bluff National Monument in Nebraska and the Wyoming counties of Albany, Platte, and Laramie (e.g., *Dorn 4975* [COLO]). Colorado collections are from the same geological formation as the type locality in Scotts Bluff. *Physaria brassicoides* can be distinguished from the similar species *Physaria vitulifera* Rydb. by its lack of teeth on the petiole and the obcordate fruits.

We thank Dr. S. Kelso of Colorado College for sharing collection data and to Dr. T. Ranker for permission to use the herbarium at the University of Colorado (COLO). Work supported by NSF grant DBI-0237149.

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Colorado

*Echinops sphaerocephalus* L. (ASTERACEAE).—Montrose Co., First Park, ca. 3 km east of Nucla, off 30.50 Road, south of town reservoir, 38°15′23″N, 108°30′29″W Nucla Quad T46N R15W sec. 10, 11 August 2000. *M.W. Denslow & S. Grother 528* (RSA)

*Previous knowledge. Echinops sphaerocephalus* L. is native to south and central Europe (Chater in Tutin et al. [eds.] 1976, Flora Europaea, Vol. 4, Cambridge University Press, Cambridge, England) and has been collected throughout much of the northeastern United States as well as in California, Colorado, Washington (Kartesz and Meacham 1999, Synthesis of the North American flora, Version 1.0 [compact disc], North Carolina Botanical Garden, Chapel Hill, NC) and Wyoming (Dorn 2001, Vascular plants of Wyoming, 3rd ed., Mountain West Publishing, Cheyenne, WY). In Colorado it is rarely collected and known collections are centered between Denver and Fort Collins.

*Significance.* This is the first collection of *Echinops sphaerocephalus* L. for the western slope of Colorado. Not mentioned in Weber and Wittman 2001 (Colorado flora: western slope, 3rd ed., University Press of Colorado, Boulder, CO). This collection is approximately 400 km from the nearest vouchered collection in the Denver area. The population appeared to be reproducing in 2000 and is still present at this site.

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Colorado

*Scorzonera laciniata* L. (ASTERACEAE).—Delta Co., Jumbo Mountain, ca. 6.4 km ENE of Paonia T13S, R91W, S35 W½ & S34 E½, 1830–2230 m (6000–7300 ft), squaw-apple and serviceberry zone and pinyon-juniper slopes above with sandstone and shales, 17 May 1997, *R. L. Hartman & Kevin J. Taylor 56318* (RM); ca. 4.8 km NNE of Crawford, T15S, R91W S17, 1830–1980 m (6000–6500 ft), juniper and aspen shrubland (*Atriplex*), 26 May 1997, *K. J. Taylor 521.* (COLO, RM); Archuleta Co., San Juan River Basin, south of Chimney Rock in the Chimney Rock Archaeological Area, just outside small visitor center building, UTM Zone 13 N4116446, E295290, ca. 2037 m (6680 ft), edge of pavement next to parking lot, under Ponderosa Pines, 9 June 2001, *M. W. Denslow & M. J. Lyon 654* (RSA).

*Previous knowledge. Scorzonera laciniata* L. (*Podospermum laciniatum* (L.) DC.) is native to south and central Europe (Chater in Tutin et al. [eds.] 1976, Flora Europaea, vol. 4. Cambridge University Press. Cambridge, England). It was first discovered in North America in 1950 near Boulder, Colorado (Great Plains Flora Association 1986, Flora of the Great Plains, University Press of Kansas, Lawrence KS) and has been collected in eastern Colorado, Kansas, Montana, Nebraska, New Mexico, Texas, and Wyoming (Kartesz and Meacham 1999, Synthesis of the North American flora, Version 1.0 [compact disc], North Carolina Botanical Garden, Chapel Hill, NC).

*Significance.* These collections represent the first records for the western slope of Colorado. This taxon previously has not been reported in floras or manuals for the western slope of Colorado (Weber and Wittman 2001, Colorado Flora: western slope, 3rd ed., University Press of Colorado, Boulder, CO). Additionally it was not reported for the state by Harrington (1954, Manual of the plants of Colorado, Sage Books, Denver, CO). The collection in Archuleta County is approximately 161 km from the nearest voucher in Delta County, suggesting that the species may be more widespread in western Colorado. Despite this possibility, recent intensive fieldwork with over 43,309 new numbered collections from an area of more than 71,780 km$^2$ on the western slope of Colorado by graduate students (floristic M.S. theses in Botany) and staff of the Rocky Mountain Herbarium have failed to encounter it in the Gunnison Basin (K. J. Taylor 2000, A floristic inventory of the Northern Gunnison Basin, Colorado; M. Arnett 2002, A floristic inventory of the Southern Gunnison Basin and the Southeastern Uncompahgre Basin, Colorado), the western San Juans and vicinity (L. M. Moore 1998, Floristics of the Upper Dolores River drainage and adjacent areas, Southwestern Colorado; M. J. Lyon 1996, A floristic survey of the San Miguel and Lower Dolores River drainages Colorado and Utah), or the White River Plateau region (J. P. Vanderhorst 1993, Flora of the Flat Tops, White River Plateau, and vicinity in northwestern Colorado).

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## Oregon

*Crupina vulgaris* Cass. (ASTERACEAE).—Wallowa Co., steep southeast-facing slopes in Joseph Canyon, ca. 1 km SE of Paradise, canyon grasslands in mosaic with shrublands (*Pseudoroegneria spicata*/*Festuca idahoensis* with *Symphoricarpos albus*), 45°55.46′N, 117°12.6′W, 1275 m, 6 May 2003, *Roché & Korfhage s.n.* (OSC); *Pseudoroegneria spicata* grasslands 1 km east of the old Rimrock Café on Highway 3, 45°53.5′N,117°15.2′W, 1200 m, 7 May 2003, *Roché & Korfhage s.n.* (OSC); and a third location on steep south-facing slopes above Jack Lowery Fork of Cache Creek, in the Hells Canyon National Recreation Area, canyon grasslands (*Pseudoroegneria spicata, Poa secunda*), rocky silt loam soils, 45°59.3′N, 116°56.8′W, 1090 m, 9 May 2003, *Roché & Korfhage s.n.* (OSC).

*Previous knowledge. Crupina vulgaris,* native to the Mediterranean region, was first discovered in Wallowa County by Clair Button, BLM botanist, Vale District, on 6 September 1995, but he did not report it or save specimens. His field notes indicated that there were a few plants remaining in flower at the bottom of Joseph Canyon "on a hot, dry, compacted microsite at the edge of a corral" just upstream from the mouth of Rush Creek (45°55.935′N, 117°10.072′W). The next discovery was seven years later in August 2002, by Nez Perce Tribe biologists, Shana Kozusko and Blair McClarin, while doing wildlife surveys on the Precious Lands Wildlife Area in Joseph Canyon (A. Sondenaa, Nez Perce Tribe, Lapwai, personal communication). Later that year it was found on a parcel of land acquired during the summer of 2002 by the Bureau of Land Management in Joseph Canyon (M. Wood, BLM, Baker City, personal communication). An outlier population discovered by Asotin County rancher Mike Haberman in T6N R45E sect. 27 SE¼ of SE¼ in the summer of 2003 forms the northern boundary of the known infestations in Joseph Canyon (45°57.873′N 117°10.256′W). A third location, in Hells Canyon, was discovered in July 2002 by a Forest Service contractor, Skip Royes, when spraying yellow starthistle with a horse-mounted pack on Jack Lowery Fork of Cache Creek. Following the discovery by the Nez Perce Tribe biologists, Mark Porter, coordinator of weed program for Wallowa Resources began an inventory of potential sites and reported the additional infestations.

*Significance.* These collections represent the first record of this species from Wallowa County, Oregon. Prior to these discoveries *Crupina vulgaris* was known in Oregon from a single location in Umatilla County, a population that was discovered in 1987. The populations in Joseph and Hells Canyons are most likely not related to the Umatilla site but rather to larger infestations across the Snake River in Idaho. *Crupina vulgaris* was first discovered in western North America in Idaho (Stickney 1972, Madroño 21:402), where it grows on south-facing grasslands in the Clearwater, Snake, and Salmon River canyons. During the first half of the 20th century thousands of sheep were trailed between winter range in Hells Canyon and summer range in the mountains of northern Idaho each year, possibly carrying seeds in the wool. All of the locations in Wallowa County are remote, steep terrain, making it likely that the infestations escaped detection for decades, a scenario consistent with *Crupina* discoveries in other states (Roché et al. 2003, Weed Research 43:177–189). Although decades have elapsed since the weed's long-distance dispersal mechanism ended, additional discoveries of *Crupina vulgaris* in Hells Canyon are probable, given the region's grazing history, limited access, and difficult terrain.

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